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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,423	03/06/2001	J. Kelly Kindig	50100-00220	2553

7590

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EXAMINER

RIDLEY, BASIA ANNA

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,423

Applicant(s)

KINDIG ET AL.

Examiner

Basia Ridley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 2-4, 6, 7, 13-16, 20, 21 and 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 8-12, 17-19 and 22-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 052401, 012202, 053102, 091802, 120902.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. The restriction requirement set forth in Office action mailed on 23 February 2005 is hereby withdrawn and claim 19 is no longer withdrawn from consideration. However, claims 2-4, 6-7, 13-16, 20-21 and 25 directed to the species A and B, as set forth in Office action mailed on 5 October 2004 remain withdrawn from consideration.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5, 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (USP 4,328,009).

Regarding claims 1, 5, 8, 10 and 12, Fischer et al. discloses a method for conversion of hydrocarbon bearing feedstock to a gas product containing methane comprising:

- contacting said hydrocarbon bearing feedstock with a hydrogen containing gas comprising at H₂ at reaction temperature of and a time sufficient to convert at least a portion of the hydrocarbons in the feedstock to methane (Fig. 1);
- wherein said hydrocarbon bearing feedstock comprises coal (abstract);
- wherein said hydrogen containing gas comprises H₂ and CO (Fig. 1).

Regarding claims 1, 8 and 12, Fischer et al. discloses all of the claims limitations as set

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forth above, but the reference does not explicitly disclose specific reaction conditions, such as reaction temperature and composition of the hydrogen containing gas. The specific reaction conditions are not considered to confer patentability to the claims. As the reaction efficiency and product composition are variables that can be modified, among others, by adjusting said reaction temperature and composition of the hydrogen containing gas, the precise reaction temperature and composition of the hydrogen containing gas would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed reaction temperature and composition of the hydrogen containing gas cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the reaction temperature and composition of the hydrogen containing gas in the method of Fischer et al. to obtain the desired reaction efficiency and product composition (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claim 1, Fischer et al. discloses all of the claims limitations as set forth above, but the reference does not explicitly disclose specific amount of hydrocarbon conversion to methane. The specific conversion efficiency is not considered to confer patentability to the claims, it would be obvious to ordinary artisan at the time of the invention to operate the method of Fischer et al. to obtain desired conversion efficiency. Some well known variables which can be adjusted to obtain the desired conversion efficiency are temperature and pressure in the reactor.

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4. Claims 9, 17-19 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (USP 4,328,009) in view of Watkins (USP 3,027,238).

Regarding claim 9, Fischer et al. discloses all of the claim limitations as set forth above, but the reference does not explicitly disclose said hydrogen containing gas being generated by the reduction of steam with a metal.

Watkins teaches an advantageous method of generating hydrogen gas by the reduction of steam with a metal (C1/L9-50) which produces said hydrogen gas at lower cost than conventional steam reforming (C1/L32-50).

It would have been obvious to one having ordinary skill in the art at the time of the invention to produce hydrogen gas necessary in the process of Fischer et al. by the reduction of steam with a metal, as taught by Watkins et al., for the purpose of lowering operation cost of said process.

Regarding claims 17 and 22-24, Fischer et al. discloses a method for conversion of hydrocarbon bearing feedstock to a gas product containing methane comprising:

- contacting said hydrocarbon bearing feedstock with a hydrogen containing gas comprising at H_2 at reaction temperature of and a time sufficient to convert at least a portion of the hydrocarbons in the feedstock to methane (Fig. 1);
- wherein said hydrocarbon bearing feedstock comprises coal (abstract).

Regarding claims 17 and 23-24, Fischer et al. discloses all of the claims limitations as set forth above, but the reference does not explicitly disclose specific reaction conditions, such as reaction temperature and pressure. The specific reaction conditions are not considered to confer patentability to the claims. As the reaction efficiency and product composition are variables that

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can be modified, among others, by adjusting said reaction temperature and pressure, the precise reaction temperature and pressure would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed reaction temperature and pressure cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the reaction temperature and pressure in the method of Fischer et al. to obtain the desired reaction efficiency and product composition (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*, 105 USPQ 223).

Regarding claims 17 and 22-24, Fischer et al. discloses all of the claim limitations as set forth above, but the reference does not explicitly disclose said hydrogen containing gas being generated by the reduction of steam with a metal.

With respect to Watkins the same comments apply as set forth above.

Regarding claims 18-19, Fischer et al. in view of Watkins discloses all of the claim limitations as set forth above. Additionally Watkins discloses the method wherein:

- wherein said metal is iron (C4/L19-25);
- wherein said metal is tin (C4/L19-25).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fischer et al. (USP 4,328,009) in view of Werth (USP 5,840,270).

Regarding claim 11, Fischer et al. discloses all of the claim limitations as set forth above. Additionally the reference discloses the process wherein hydrogen containing gas is generated by

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steam reforming, but the reference does not disclose the process wherein said gas is generated by partial oxidation.

Werth teaches that partial oxidation is advantageous over steam reforming because of better heat efficiency (C7/L45-60).

It would have been obvious to one having ordinary skill in the art at the time of the invention to use partial oxidation rather than steam reforming to produce the hydrogen containing gas in the process of Fischer et al., as taught by Werth, for the purpose of improving heat efficiency of the overall process.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1, 5, 8-12, 17-18 and 22-24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 09/800,421. Although the conflicting claims are not identical, they are not patentably distinct from each other because said claims 1, 5, 8-12, 17-18 and 22-24 of the instant application recite only the limitations which are recited in claims 1-15 of copending Application No. 09/800,421.

Regarding claim 23, claims 1-15 of copending Application No. 09/800,421 recite all of the claims limitations as set forth above, but said claims 1-15 of copending Application No. 09/800,421 do not recite specific reaction conditions, such as reaction pressure. The specific reaction conditions are not considered to confer patentability to the claims. As the reaction efficiency and product composition are variables that can be modified, among others, by adjusting said reaction pressure, the precise reaction pressure would have been considered a result effective variable by one having ordinary skill in the art at the time the invention was made. As such, without showing unexpected results, the claimed reaction pressure cannot be considered critical. Accordingly, one of ordinary skill in the art at the time the invention was made would have optimized, by routine experimentation, the reaction pressure in the method recited in claims 1-15 of copending Application No. 09/800,421 to obtain the desired reaction efficiency and product composition (*In re Boesch*, 617 F.2d. 272, 205 USPQ 215 (CCPA 1980)), since it has been held that where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Aller*,

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105 USPQ 223).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claim 19 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 09/800,421 in view of Watkins (USP 3,027,238).

Claims 1-15 of copending Application No. 09/800,421 recite all of the limitations as recited in claim 19 of the instant application, but they do not explicitly recite the metal being tin.

Watkins establishes equivalency of tin and iron (C4/L19-25). As instant specification is silent to unexpected results, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the metal recited in claims 1-15 of copending Application No. 09/800,421 with tin, since such modification would have involved a mere substitution of known equivalent structures. A substitution of known equivalent structures is generally recognized as being within the level of ordinary skill in the art.

This is a provisional obviousness-type double patenting rejection.

Conclusion

10. In view of the foregoing, none of the claims are allowed.

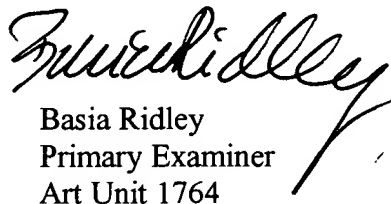
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Basia Ridley, whose telephone number is (571) 272-1453.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola, can be reached on (571) 272-1444.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Technical Center 1700 General Information Telephone No. is (571) 272-1700. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Questions on access to the Private PAIR system should be directed to the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).


Basia Ridley
Primary Examiner
Art Unit 1764

BR
April 18, 2005